14 GENTIAN VIOLET

14.1 INTRODUCTION

Gentian violet (crystal violet) is a sensitive stain which reacts with epithelial cells and other portions of latent print residue transferred upon surface contact. The presence of sebum appears to serve as an excellent transfer medium for sloughed epidermal cells and as a result, gentian violet is usually effective on surfaces which readily hold the deposited sebum, such as the adhesive side of tapes. The high sensitivity of gentian violet produces an immediate reaction upon skin contact, therefore, leak proof gloves are required for examinations. Accidental staining of hands is relatively harmless but usually cannot be de-stained. Disappearance of discoloration is a result of cell sloughing.

14.2 PREPARATIONS

Gentian violet working solution- 0.1% concentration preferred.

Higher concentrations are sometimes used, but increased amounts of gentian violet are difficult to dissolve and can create a increased background discoloration.

1. If distilled water is not available deionized water may be used.
2. Dissolve 1.0 grams of gentian violet in one liter of distilled water.

14.3 MINIMUM STANDARDS & CONTROLS

Dye stains, such as Gentian Violet, work by discoloring latent impressions composed of epithelial cells and sebum. Due to their inherent ability to stain and discolor these materials, there is no need for test impressions to be done prior to evidence application.

14.4 PROCEDURE OR ANALYSIS

1. Immerse item to be processed in the working solution in a large tray.
2. Allow the item to remain completely immersed for approximately 30 seconds while agitating.
3. Remove the item from the working solution and rinse excess stain from the item by washing with a gentle flow of cold tap water.
4. This process may be repeated until optimum contrast is reached between the impressions developed and the background.
5. Photograph any developed impressions.

14.5 INTERPRETATION OF RESULTS

Developed latent impressions on light colored tapes should be photographed directly. Contrast may decrease as the substrate dries. Stained impressions which fade as the tape dries may be improved by immersing the tape in a tray of clear water and photographing the impressions while the tape is submerged.

14.6 REFERENCES

1. Arima, T. "Development of Latent Fingerprints on Sticky Surfaces by Dye Staining or Fluorescent Brightening"; *Identification News*, February 1981.
2. Cowger, James F. *Friction Ridge Skin Comparison and Identification of Fingerprints*; Boca Raton: CRC Press, 1993.
3. Kent, Terry, ed. *Fingerprint Development Techniques*. Heanor Gate Publisher: Derbyshire, England, 1993.

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